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00512224 Foodline Accession Number: 404171  
Production of chocolate drink.

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Patent: JP 7079749 A

Priority Application Date: 19930920

Notes: Date of Publication: 28.3.95

Language: Japanese

Summary Language: English

Document Type: Patent

Foodline Update Code: 19960314

**Abstract:** A method for producing a chocolate drink having a good flavour, texture and mouthfeel is described. Cocoa powder in the chocolate drink is replaced by a percolate of cocoa mass or cocoa nib treated with at least one of the following enzymes: glucoamylase, protease, pectinase, lipase, cellulase, and a cell-wall-digesting enzyme.

**Section Heading:** BEVERAGES

**Descriptors:** BEVERAGES; CHOCOLATE DRINK; IMPROVEMENT; JAPANESE PATENT; MOUTHFEEL; TEXTURE

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**DETAILED DESCRIPTION**

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**[Detailed Description of the Invention]****[0001]**

**[Industrial Application]** By going into containers, such as a can, and making the extract of a chocolate liquor or cocoa nibs carry out dissolution distribution of the cocoa powder in detail about the manufacturing method of the chocolate beverage which can be drunk as it is, this invention has the flavor of chocolate, and although it is moreover substantial, it relates to the manufacturing method of the chocolate beverage used as the chocolate beverage which the taste carried out entirely tends to drink.

**[0002]**

**[Description of the Prior Art]** Cocoa is the powder which ground the cocoa cake which remained after squeezing the chocolate liquor which ground the cocoa nibs which are the albumen section of a cacao bean and separating the cocoa butter which is fat, and drink is dispersedly dissolution [ to hot and cold water ] this and presented with it. However, cocoa powder was very troublesome, in order to have had to make hot and cold water carry out dissolution distribution of the powder at every drink, and to have carried out dissolution distribution so that a pellet might not be produced. In order to solve this difficulty, hot and cold water is made to carry out dissolution distribution of the cocoa powder, and the cocoa drink of the mass production method with which added milk, sweetners, etc. by request and containers, such as a can, were filled up is made. Drink can be presented with this cocoa drink as it is, and cocoa can be drunk even if it does not perform troublesome actuation.

**[0003]** The manufacturing method (JP,52-12269,B) of the transparent cocoa drink from which a cocoa drink raw material is extracted with water, and an insoluble component is removed on the other hand is proposed. In case this approach extracts cocoa powder with water, it is performing founding processing which removes an insoluble component with filtration and a cream separator at the same time it carries out enzyme processing and increases a fusibility component. Therefore, this cocoa drink has a feeling of transparenence which is transparent.

**[0004]**

**[Problem(s) to be Solved by the Invention]** Insoluble components, such as fiber from cocoa powder, protein, a fat, and starch, serve as a fine particle, and are distributing the cocoa drink which carried out dissolution distribution of the cocoa powder. And the thickening agent and the gums are added as a stabilizer so that it may not precipitate while these insoluble components save. Consequently, although the cocoa drink was a substantial drink of rich flavor, when it drank, it seemed heavy as DOROTSU, and became that of a potato that resistance is sensed for a throat and it is hard to drink. Since the cocoa powder used as a raw material was moreover degreased, it was mild and became the thing which comes from cocoa butter and which lacked in the \*\*\*\*\* desirable flavor reminded of chocolate. And when the amount of the cocoa powder used in order to improve the heavy sensibility when drinking was reduced, flavor with the substance which is the description of a cocoa drink was lost. In addition, the chocolate beverage which carried out the dissolution distribution of the chocolate at hot and cold water cannot be used as a drink with which containers, such as a can which must carry out dissolution distribution just before drinking, cannot offer if it is not the teahouse prepared by order of a home and a visitor, but prepares beforehand, and is offered in order that then [ an assembly and ], fat may solidify on a front face, if it saves for a long time, since there is much cocoa butter which is a fat component, filled up.

**[0005]** On the other hand, although the transparent cocoa drink was felt refreshed when it drank, and it was light flavor, it became flavor different from the cocoa drink using cocoa powder, and became scarce at cocoa-likeness. And since the cocoa powder degreased also by this approach was used, mild and \*\*\*\*\* flavor was not sensed. In addition, although the extract of cacao and the cacao from which the back insoluble element which made the enzyme act at the mixed stock of water is removed was indicated by JP,50-33137,B, this extract as well as a transparent cocoa drink became scarce at flavor with cocoa-likeness or the chocolate's substance.

[0006] Although this invention is the light taste carried out entirely when it drinks except for the fault of such a conventional cocoa drink, it aims at offering the chocolate beverage which carried out the \*\*\*\*\* chocolate's substantial flavor.

[0007]

[Means for Solving the Problem] Although dissolution distribution is carried out and cocoa powder is conventionally used as the cocoa drink at water, this invention is taken as the chocolate beverage which carried out dissolution distribution of the cocoa powder using the extract which added and extracted water to a chocolate liquor or cocoa nibs instead of water, and carried out the flavor of chocolate.

[0008] The chocolate liquor used here is ground against a grinding roll, and crushes cocoa nibs, and cocoa nibs point out the albumen part which removed the envelope and germ of a cacao bean. What also roasted the raw thing is sufficient as KAKAYAMASU or cocoa nibs used by this invention. Moreover, what an envelope and albumen are mixing by liking may be used. However, what usually roasted and removed the envelope and the germ is used. Moreover, the chocolate liquor and cocoa nibs which carried out alkali treatment may be used.

[0009] A molten bath or water is added to a chocolate liquor, it carries out a counterflow, adding and mixing a molten bath or water, after making it agitate or breaking cocoa nibs finely, etc., and a chocolate liquor or cocoa nibs, and water are mixed and extracted. At this time, it heats as occasion demands, and extracts, and if an extract finishes, solids, such as cocoa nibs, will be removed by centrifugal separation, filtration, etc. It may cool, after removing solid content, and fats-and-oils components, such as cocoa butter separated from a chocolate liquor or cocoa nibs, may be removed by well-known approaches, such as back centrifugal separation, filtration, etc. which solidified the fats-and-oils component. Although what is necessary is just to determine to arbitration that the amount of the water for the extract added to a chocolate liquor or cocoa nibs serves as an extract of favorite concentration, it is good to usually consider as water 10 - 19 weight part to cocoa nibs or a chocolate liquor 10 - 1 weight section, and to consider as 20 weight sections in the whole quantity. In addition, when extracting, extraction efficiency will become good if water-soluble organic solvents, such as the additive and ethyl alcohol for, and making a chocolate liquor easy to mix with water, and propylene glycol, are added to water. [ improving the permeability inside /, such as an emulsifier and a phosphoric-acid polymerization object, / cocoa nibs ]

[0010] In addition, if an enzyme is added and processed to an extract and coincidence in advance of an extract at a chocolate liquor or cocoa nibs, the amount of the desiccation solid content of an extract increases and a thick extract can be obtained. If a chocolate liquor or cocoa nibs adds and takes hot and cold water, while sterilizing the saprophytic bacteria which have heated and adhered to 80 degrees C or more, enzyme processing can be performed by adding one sort or the enzyme chosen two or more sorts according to the purpose from enzymes, such as glucoamylase, a pectinase, a protease, lipase, a cellulase, and a cell wall dialytic ferment, after becoming a paste starch. that is, since the enzyme which processes a chocolate liquor or cocoa nibs can give characteristic flavor to an extract according to the class of enzyme so that it may see also in Table 1, it is processed with the enzyme which is alike with a request and serves as the target flavor. In addition, although each enzyme may be made to act on coincidence when using two or more enzymes, you may make it act separately. The enzyme of usable marketing can be used for food like amylase [ of Amano Pharmaceuticals ] A, protease A "Amano", papain, and lipase A "Amano", and cellulase A "Amano" as an enzyme used here. Moreover, although the temperature when acting processes an enzyme on the conditions for which it was most suitable according to the enzyme to be used, in order to prevent propagation of saprophytic bacteria etc., processing above 45 degrees C is desirable. In addition, the enzyme processing time is good in 3 - 4 hours. In addition, an extract processes heating etc. if needed and inactivates an enzyme.

[0011] Subsequently, the extract of the chocolate liquor which carried out in this way and was obtained, or cocoa nibs is made to carry out dissolution distribution of the cocoa powder. Although what is necessary is just to also set the amount of the cocoa powder which processes like the time of manufacturing the conventional cocoa drink, performs, and is used by liking to a chocolate liquor or a cocoa-nibs extract in order to carry out dissolution distribution of the cocoa powder, the amount below the conventional half is usually enough. That is, although the cocoa powder around 0.5-10g per 100g of drinks was used for the conventional cocoa drink, it can set preferably the 0.5-5g per 100g of drinks of the amount of the cocoa powder used to 0.5-4g by using the extract of a chocolate liquor or cocoa nibs. In addition, the addition component which has added seasonings, such as flavors, such as dairy products, such as sweeteners, such as sugar, and skimmilk powder, and a vanilla bean, and salt, to the conventional cocoa drinks, such as pH regulator, a stabilizer, an antioxidant, and an emulsifier, as occasion demands again is used for a cocoa drink by liking.

[0012] Thus, since the chocolate liquor containing many cocoa butter components or the extract from cocoa nibs was used for the obtained chocolate beverage, it turned into a drink of the serious desirable taste which carried out the chocolate's substantial pure flavor. and the heavy throat sensed in a throat as DOROTSU when it drinks since the amount of the cocoa

powder to be used is made few compared with the conventional cocoa drink -- elasticity -- there was no admiration and it became the drink which was carried out entirely and with which a feeling tends to drink that it is only light.

[0013]

[Example]

an example 1 -- after cooling at 70 degrees C, glucoamylase (Bacillus subtilis system) was made to react 0.6 \*\*\*\*\*s for 3 hours, after holding at 80 degrees C for 1 hour, adding the cocoa-nibs 200 section (the same the weight section and the following) broken finely to the water of the 2000 sections, and agitating it After solidifying the fat component which heats for 30 minutes at 100 degrees C after reaction termination, was made to carry out deactivation of the enzyme, let it pass to the screen, subsequently cooled to 10 degrees C except for cocoa nibs, and carried out the separation extract from cocoa nibs, the centrifugal separation machine removed solid content and the extract of cocoa nibs was obtained. The cocoa powder 40 section and the sugar 80 section, the whole-milk-powder 10 section, the salt 1.5 section, and the emulsifier (sugar ester) 2 section were added to the extract 1000 section of these cocoa nibs, after filling up the can after the mixed dissolution and sealing according to the conventional method, warming, retort sterilization processing was performed, and the chocolate beverage was obtained. Although it has the \*\*\*\*\* flavor of chocolate, when it drank compared with the conventional cocoa drink, the light flavor carried out entirely carried out this chocolate beverage.

[0014] an example 2 -- after cooling at 60 degrees C, cellulase A "Amano" was made to react 0.6 \*\*\*\*\*s for 3 hours, after holding at 80 degrees C for 1 hour, adding the chocolate liquor 200 section broken finely to the water of the 1000 sections, and agitating it strongly Since heat for 30 minutes at 100 degrees C after reaction termination, deactivation of the enzyme is carried out, it cools at 10 degrees C and the chocolate liquor was solidified, solid content was removed in centrifugal separation and the extract of a chocolate liquor was obtained. The cocoa powder 20 section and the sugar 80 section, the whole-milk-powder 10 section, the salt 1.5 section, and the emulsifier (sugar ester) 2 section were added to the extract 1000 section of this chocolate liquor, after filling up the can after the mixed dissolution and sealing according to the conventional method, warming, retort sterilization processing was performed, and the chocolate beverage was obtained. Although it has the \*\*\*\*\* flavor of chocolate, when it drank compared with the conventional cocoa drink, the light flavor carried out entirely carried out this chocolate beverage.

[0015] After holding at 80 degrees C for 1 hour, adding and agitating the water 2000 section in the cocoa-nibs 200 section broken finely like example 3 example 1, After cooling at 50-70 degrees C, adding the enzyme of a publication, making it react to Table 1 for 3 hours and heating for 30 minutes at 100 degrees C, it let it pass to the screen, and except for cocoa nibs, subsequently to 10 degrees C it cooled, and after solidifying the fat component from cocoa nibs, the centrifugal separation machine removed solid content and the extract of cocoa nibs was obtained. Each extractability (solid content content) of each extract was 10% or more. In addition, the example of a comparison was the extract of the cocoa nibs processed similarly [ without adding an enzyme ], and the extractability of this thing was 6.2%.

[0016]

[Table 1]

酵 素 名	固形部含量	抽 出 液 の 風 味
アミラーゼ	11.4%	マイルド、香ばしい甘さ有り
セルラーゼ	12.5	マイルド、香ばしい甘さ有り
リパーゼ	10.4	マイルド
プロテアーゼ	12.4	特徴ある風味
比 較 例	6.2	埃臭、カビ臭有り

[0017] In addition, the cocoa powder 30 section, the sugar 85 section, the whole-milk-powder 10 section, the salt 1.5 section, and the emulsifier (sugar ester) 2 section were added to the 1000 sections of each extract, it processed like the example 1 and the chocolate beverage using each extract was obtained. These chocolate beverages turned into a chocolate beverage of a light taste which the light flavor carried out entirely carries out, when it drank compared with the conventional cocoa drink, although it has the \*\*\*\*\* flavor of chocolate. In addition, the flavor of thick chocolate carried

out the chocolate beverage using the extract which carried out amylase processing. Moreover, the chocolate beverage using the extract which carried out cellulase processing had the strong bitter feeling, and each chocolate beverage using the extract processed by lipase and the protease turned into a characteristic chocolate beverage according to the class of enzyme used when a light taste senses strong and obtains an extract. In addition, the chocolate beverage using the extract of the example of a comparison extracted without carrying out enzyme processing had the weak flavor of cocoa, and most flavors of chocolate were not sensed.

[0018] Moreover, as a result of measuring the relative amount of an aroma component by the gas chromatography method from each extract, as shown in Table 2, compared with the unsettled extract extracted without performing enzyme processing, many and desirable aroma became strong.

[0019]

[Table 2]

酵素種別	アミラーゼ	セルラーゼ	リパーゼ	プロテアーゼ
酵素処理液	20.1	16.9	42.2	31.8
未処理	15.6	13.7	23.7	15.6

[0020] Measurement carried out liquid-liquid extraction of the 200g of each extract with the 500ml upper ether, condensed the ether extract, and after it performed and carried out the re-enrichment of uranium isotope of the topping according this to sublimation tubing, it performed gas chromatography analysis. Using the DB-WAX column, the temperature up of the conditions of gas chromatography was carried out, they were measured to 225 degrees C, at the rate of 60 to 2-degrees C/m, and the amount of an aroma component was calculated from the ratio with the peak area of the hexanal added as an internal standard. In addition, using the enzyme which heats and carried out deactivation, it processes un-processing similarly and asks for it.

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**CLAIMS**

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[Claim(s)]

[Claim 1] The manufacturing method of the chocolate beverage characterized by using the extract which added and extracted water to a chocolate liquor or cocoa nibs instead of the hot and cold water which carries out dissolution distribution of the cocoa powder in case a cocoa drink is manufactured.

[Claim 2] The manufacturing method of the chocolate beverage according to claim 1 processed with an enzyme when adding and extracting water to a chocolate liquor or cocoa nibs.

[Claim 3] The manufacturing method of the chocolate beverage according to claim 2 whose processing with an enzyme is processing with one sort or the enzyme chosen two or more sorts according to the purpose from glucoamylase, a pectinase, a protease, lipase, a cellulase, and a cell wall dialytic ferment.

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[Translation done.]